

High Capacitance ESD Protection Diode

1 Features

- IEC 61000-4-2 Level 4 ESD Protection
 - ± 30 -kV Contact Discharge
 - ± 30 -kV Air Gap Discharge
- Peak Reverse Working Voltage: 24V (Maximum)
- IO Capacitance:
 - 25pF (Typical)
- DC Breakdown Voltage: 26V (Minimum)
- Low Leakage Current: 1 μ A (Maximum)
- Industrial Temperature Range: -55°C to $+125^{\circ}\text{C}$
- Package DFN1006-2L

2 Applications

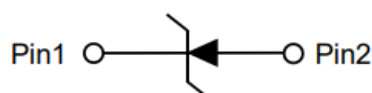
- End Equipment
 - Smart Wearable
 - TV and Monitors
 - Cellular handsets and accessories
 - Portable electronics
 - Communication systems
 - Computers and peripherals

3 Description

The SLEN224NCU is a uni-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and ultralow ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The

SLEN224NCU complies with the IEC 61000-4-2 (ESD) with ± 30 kV air and ± 30 kV contact discharge. It is assembled into an ultra-small 1.0mmx0.6mm DFN lead-free package. The small size and high ESD surge protection make SLEN224NCU an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

4 Pin Configuration



DFN1006-2L

5 Device Information

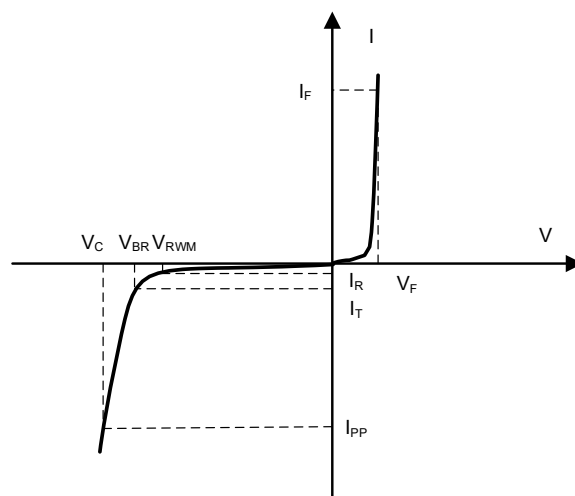
PART NUMBER	PACKAGE	BODY SIZE (NOM)
SLEN224NCU	DFN1006-2L	1.00 mm x 0.60mm

6 Absolute maximum Ratings @25°C

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power ($t_p=8/20\mu\text{s}$)	P_{PP}	360	W
Peak Pulse Current ($t_p=8/20\mu\text{s}$)	I_{PP}	7	A
Operating Temperature	T_J	-55 to 125	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 to 150	$^{\circ}\text{C}$
ESD Protection-Contact Discharge	V_{ESD}	± 30	kV
ESD Protection-Air Discharge	V_{ESD}	± 30	kV

7 Electronics Parameter Definiations

Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
P_{PP}	Peak Pulse Power
C_J	Junction Capacitance
I_F	Forward Current
V_F	Forward Voltage @ I_F



8 Electrical characteristics (@25°C unless otherwise specified)

PARAMETER	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNITS
Peak Reverse Working Voltage	V_{RWM}				24	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	26			V
Reverse Leakage Current	I_R	$V_{RWM} = 26\text{V}$, $T_A = 25^\circ\text{C}$			1	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$, $t_P = 8/20\mu\text{s}$		33	39	V
Clamping Voltage	V_C	$I_{PP} = 7\text{A}$, $t_P = 8/20\mu\text{s}$		48	52	V
Junction Capacitance	C_j	$V_R = 0\text{V}$, $f = 1\text{MHz}$		25		pF

9 Typical Characteristics

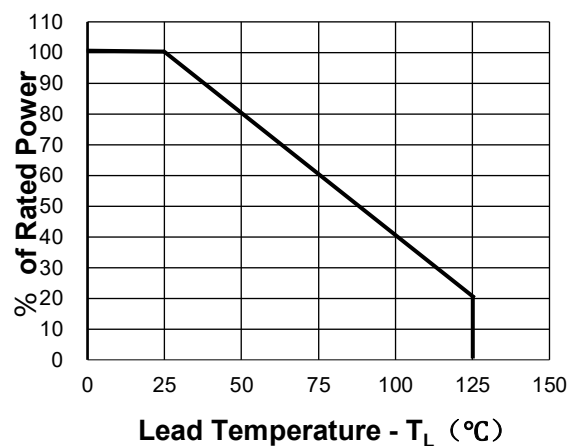


Fig 1. Power Derating Curve

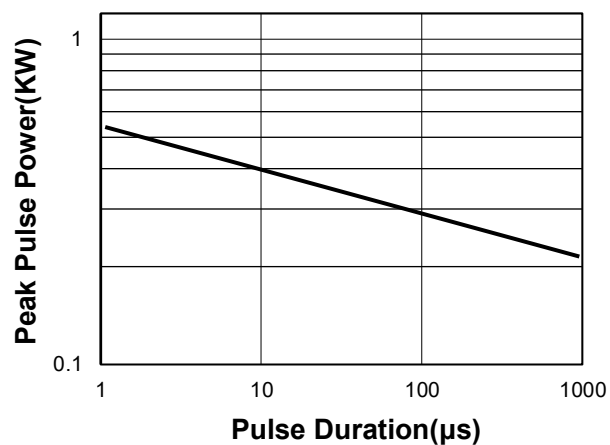


Fig 2. Peak Pulse Power vs. Pulse Time Current

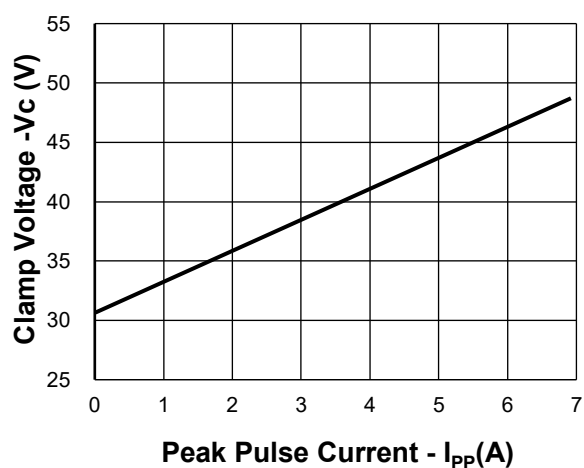


Fig 3. Peak Pulse Power vs. Pulse Time Current

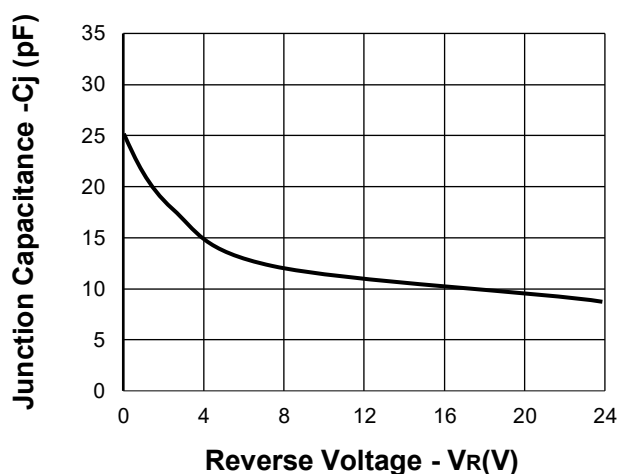
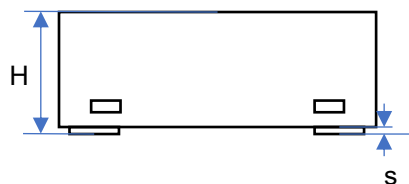
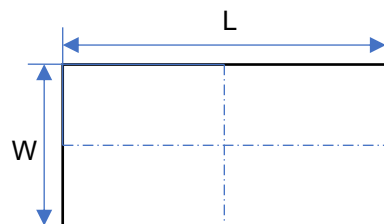


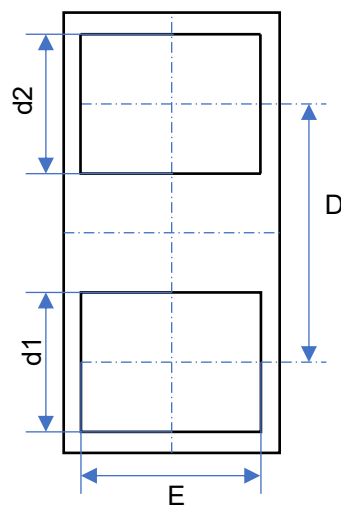
Fig 4. Junction Capacitance vs. Reverse

10 Product dimension

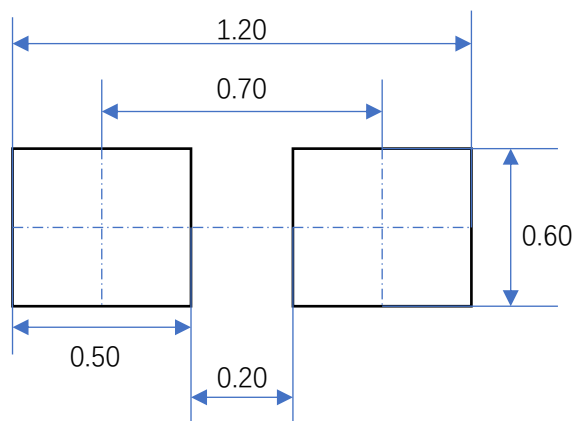
DFN1006-2L



DIM	UNITS (mm)		
	MIN.	TYP.	MAX.
L	0.95	1.00	1.08
W	0.55	0.60	0.68
H	0.39	0.45	0.55
s	0.00	0.02	0.05
D	0.60	0.65	0.70
E	0.40	0.50	0.60
d1	0.20	0.25	0.30
d2	0.20	0.25	0.30



11 PCB Layout Footprints



12 Ordering Information

Part Number	Packaging	Reel Size
SLEN224NCU	10000/Tape & Reel	7 inch